

CLAIMS

1. A method of access control for a movable network managed by a mobile router, wherein said mobile router is interconnected through a bi-directional link with a mobility anchoring agent that anchors the network mobility for the mobile router, said method comprising the steps of:

- exercising access control at the mobility anchoring agent to filter downlink packets to said mobile router; and
- exercising access control at said mobile router to filter uplink packets to said mobility anchoring agent.

2. The method of claim 1, wherein said mobility anchoring agent is a home agent in a home network of said mobile router.

15 3. The method of claim 1, wherein said mobility anchoring agent is a local forwarding agent in a visited network.

4. The method of claim 1, wherein said mobility anchoring agent runs a NEMO-based (Network Mobility) mobility support protocol with said mobile router.

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5. The method of claim 4, wherein said mobile router is interconnected with said mobility anchoring agent through a NEMO bi-directional tunnel, and downlink packets are filtered before said NEMO bi-directional tunnel, and uplink packets are filtered before said NEMO bi-directional tunnel.

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6. The method of claim 1, wherein said step of exercising access control at the mobility anchoring agent involves checking headers of IP packets that traverse an access control point in said mobility anchoring agent, and said step of exercising access control at said mobile router involves checking headers of IP packets that traverse an access control point in said mobile router.

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7. The method of claim 1, further comprising the step provisioning an access control module at said mobility anchoring agent and an access control module at said mobile router with provisioning information from an access control source.

5 8. The method of claim 7, wherein said provisioning step comprises the steps of:

- transferring provisioning information for the access control modules in both said mobility anchoring agent and said mobile router from said access control source to said mobility anchoring agent; and

- subsequently forwarding provisioning information for the access control module in said mobile router from said mobility anchoring agent to said mobile router over the bi-directional link.

9. The method of claim 8, wherein said provisioning information for the access control module in said mobile router includes provisioning information related only to
15 the uplink from said mobile router to said mobility anchoring agent.

10. The method of claim 9, wherein said uplink-related provisioning information includes access control filter information for filtering said uplink packets.

20 11. The method of claim 7, wherein said access control source is implemented in an AAA client, and provisioning information related to a node in said movable network is transferred from an AAA server associated with the home network of said node to said AAA client and the access control source.

25 12. The method of claim 11, wherein the provisioning information related to said node is transferred to said access control modules from said access control source only upon successful authentication of said node.

30 13. The method of claim 11, wherein said AAA client is located in the same network as the mobility anchoring agent, and provisioning information from said AAA

client is transferred to the mobile router side at least partly over said bi-directional link.

14. The method of claim 13, wherein said AAA client is a PANA (Protocol for carrying Authentication for Network Access) Authentication Agent.

15. The method of claim 7, wherein said provisioning step includes transferring provisioning information with at least one of the following protocols: PANA (Protocol for carrying Authentication for Network Access), PPP (Point-to-Point Protocol) and IEEE 802.1X.

16. An arrangement for access control for a movable network managed by a mobile router, wherein said mobile router is interconnected through a bi-directional link with a mobility anchoring agent that anchors the network mobility for the mobile router, said arrangement comprising:

- means for exercising access control at the mobility anchoring agent to filter downlink packets to said mobile router; and
- means for exercising access control at said mobile router to filter uplink packets to said mobility anchoring agent.

17. The arrangement of claim 16, wherein said mobility anchoring agent is a home agent in a home network of said mobile router.

18. The arrangement of claim 16, wherein said mobility anchoring agent is a local forwarding agent in a visited network.

19. The arrangement of claim 16, wherein said mobile router and said mobility anchoring agent are configured to run a NEMO-based (Network Mobility) mobility support protocol.

20. The arrangement of claim 19, wherein said mobile router is interconnected with said mobility anchoring agent through a NEMO bi-directional tunnel, and said access control exercising means at said mobility anchoring agent is operable for filtering said downlink packets before said NEMO bi-directional tunnel, and said access control exercising means at said mobile router is operable for filtering said uplink packets before said NEMO bi-directional tunnel.

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21. The arrangement of claim 16, wherein said means for exercising access control at the mobility anchoring agent is operable for checking headers of IP packets that traverse an access control point in said mobility anchoring agent, and said means for exercising access control at said mobile router is operable for checking headers of IP packets that traverse an access control point in said mobile router.

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22. The arrangement of claim 16, further comprising means for provisioning said access control exercising means at said mobility anchoring agent and said access control exercising means at said mobile router with provisioning information from an access control source.

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23. The arrangement of claim 22, wherein said provisioning means comprises:
- means for transferring provisioning information for access control at both said mobility anchoring agent and said mobile router from said access control source to said mobility anchoring agent; and
- means for forwarding provisioning information for access control at said mobile router from said mobility anchoring agent to said mobile router over the bi-directional link.

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24. The arrangement of claim 23, wherein said provisioning information for access control at said mobile router includes information related only to the uplink from said mobile router to said mobility anchoring agent.

25. The arrangement of claim 24, wherein said uplink-related provisioning information includes access control filter information for filtering said uplink packets.

26. The arrangement of claim 22, wherein said access control source is
5 implemented in an AAA client, and said arrangement further comprises means for transferring provisioning information related to a given node in said movable network from an AAA server associated with the home network of said node to said AAA client.

10 27. The arrangement of claim 26, wherein said provisioning means is operable for provisioning the provisioning information related to said node from said access control source only upon successful authentication of the node.

15 28. The arrangement of claim 26, wherein said AAA client is located in the same network as the mobility anchoring agent, and said arrangement further comprises means for transferring provisioning information from said AAA client to the mobile router side at least partly over said bi-directional link.

20 29. The arrangement of claim 26, wherein said AAA client is a PANA (Protocol for carrying Authentication for Network Access) Authentication Agent.

25 30. The arrangement of claim 22, wherein said provisioning means is operable for transferring provisioning information with at least one of the following protocols: PANA (Protocol for carrying Authentication for Network Access), PPP (Point-to-Point Protocol) and IEEE 802.1X.

31. A mobility anchoring agent for anchoring network mobility for a mobile router that manages a movable network, wherein said mobility anchoring agent comprises:
30 - means for interconnection with said mobile router through a bi-directional link; and

- means for exercising access control to monitor and filter downlink packets to said mobile router.

32. The mobility anchoring agent of claim 31, wherein said mobility anchoring agent is configured to run a NEMO-based (Network Mobility) mobility support protocol with said mobile router.

5 33. The mobility anchoring agent of claim 31, wherein said mobility anchoring agent is configured for interconnection with said mobile router through a NEMO bi-directional tunnel, and said means for exercising access control is operable for filtering 10 said downlink packets before said NEMO bi-directional tunnel.

15 34. The mobility anchoring agent of claim 31, wherein said means for exercising access control is operable for checking headers of packets that traverse an access control point in said mobility anchoring agent.

35. The mobility anchoring agent of claim 31, further comprising:

- means for receiving provisioning information for access control at both said mobility anchoring agent and said mobile router from an access control source;

20 - means for forwarding provisioning information for access control at said mobile router to said mobile router.

36. The mobility anchoring agent of claim 35, wherein said provisioning information for access control at said mobile router includes information related only 25 to the uplink from said mobile router to said mobility anchoring agent.

37. The mobility anchoring agent of claim 31, wherein said mobility anchoring agent is configured to operate as local home agent for a node in said movable network.

38. An access control enforcement module for operation with a mobility anchoring agent that anchors network mobility for a mobile router managing a movable network, said mobile router being interconnected through a bi-directional link with said mobility anchoring agent, wherein said access control enforcement module is operable
5 for exercising access control to monitor and filter downlink packets to said mobile router.

39. A method of network mobility support for a movable network managed by a mobile router, said mobile router being interconnected through a bi-directional link
10 with a mobility anchoring agent that anchors the network mobility for the mobile router, wherein provisioning information for access control of at least one node in said movable network is transferred from an access control source located in the same network as the mobility anchoring agent to the mobile router side at least partly over said bi-directional link.

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40. An arrangement for network mobility support for a movable network managed by a mobile router, said mobile router being interconnected through a bi-directional link with a mobility anchoring agent that anchors the network mobility for the mobile router, wherein said arrangement comprises means for transferring provisioning
20 information for access control of at least one node in said movable network from an access control source located in the same network as the mobility anchoring agent to the mobile router side at least partly over said bi-directional link.

AMENDED CLAIMS

[received by the International Bureau on 19 May 2005 (19.05.2005);
original claims 39-40 is deleted, remaining claims unchanged (7 pages)]

CLAIMS

1. A method of access control for a movable network managed by a mobile router, wherein said mobile router is interconnected through a bi-directional link with a mobility anchoring agent that anchors the network mobility for the mobile router, said method comprising the steps of:

- exercising access control at the mobility anchoring agent to filter downlink packets to said mobile router; and

- exercising access control at said mobile router to filter uplink packets to

10 said mobility anchoring agent.

2. The method of claim 1, wherein said mobility anchoring agent is a home agent in a home network of said mobile router.

15 3. The method of claim 1, wherein said mobility anchoring agent is a local forwarding agent in a visited network.

4. The method of claim 1, wherein said mobility anchoring agent runs a NEMO-based (Network Mobility) mobility support protocol with said mobile router.

20 5. The method of claim 4, wherein said mobile router is interconnected with said mobility anchoring agent through a NEMO bi-directional tunnel, and downlink packets are filtered before said NEMO bi-directional tunnel, and uplink packets are filtered before said NEMO bi-directional tunnel.

25 6. The method of claim 1, wherein said step of exercising access control at the mobility anchoring agent involves checking headers of IP packets that traverse an access control point in said mobility anchoring agent, and said step of exercising access control at said mobile router involves checking headers of IP packets that 30 traverse an access control point in said mobile router.

7. The method of claim 1, further comprising the step provisioning an access control module at said mobility anchoring agent and an access control module at said mobile router with provisioning information from an access control source.

5 8. The method of claim 7, wherein said provisioning step comprises the steps of:

- transferring provisioning information for the access control modules in both said mobility anchoring agent and said mobile router from said access control source to said mobility anchoring agent; and

10 - subsequently forwarding provisioning information for the access control module in said mobile router from said mobility anchoring agent to said mobile router over the bi-directional link.

9. The method of claim 8, wherein said provisioning information for the access control module in said mobile router includes provisioning information related only to
15 the uplink from said mobile router to said mobility anchoring agent.

10. The method of claim 9, wherein said uplink-related provisioning information includes access control filter information for filtering said uplink packets.

20 11. The method of claim 7, wherein said access control source is implemented in an AAA client, and provisioning information related to a node in said movable network is transferred from an AAA server associated with the home network of said node to said AAA client and the access control source.

25 12. The method of claim 11, wherein the provisioning information related to said node is transferred to said access control modules from said access control source only upon successful authentication of said node.

30 13. The method of claim 11, wherein said AAA client is located in the same network as the mobility anchoring agent, and provisioning information from said AAA

client is transferred to the mobile router side at least partly over said bi-directional link.

14. The method of claim 13, wherein said AAA client is a PANA (Protocol for
5 carrying Authentication for Network Access) Authentication Agent.

15. The method of claim 7, wherein said provisioning step includes transferring
provisioning information with at least one of the following protocols: PANA (Protocol
for carrying Authentication for Network Access), PPP (Point-to-Point Protocol) and
10 IEEE 802.1X.

16. An arrangement for access control for a movable network managed by a mobile
router, wherein said mobile router is interconnected through a bi-directional link with
a mobility anchoring agent that anchors the network mobility for the mobile router,
15 said arrangement comprising:

- means for exercising access control at the mobility anchoring agent to
filter downlink packets to said mobile router; and
- means for exercising access control at said mobile router to filter uplink
packets to said mobility anchoring agent.

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17. The arrangement of claim 16, wherein said mobility anchoring agent is a home
agent in a home network of said mobile router.

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18. The arrangement of claim 16, wherein said mobility anchoring agent is a local
forwarding agent in a visited network.

19. The arrangement of claim 16, wherein said mobile router and said mobility
anchoring agent are configured to run a NEMO-based (Network Mobility) mobility
support protocol.

20. The arrangement of claim 19, wherein said mobile router is interconnected with said mobility anchoring agent through a NEMO bi-directional tunnel, and said access control exercising means at said mobility anchoring agent is operable for filtering said downlink packets before said NEMO bi-directional tunnel, and said access control 5 exercising means at said mobile router is operable for filtering said uplink packets before said NEMO bi-directional tunnel.

21. The arrangement of claim 16, wherein said means for exercising access control at the mobility anchoring agent is operable for checking headers of IP packets that 10 traverse an access control point in said mobility anchoring agent, and said means for exercising access control at said mobile router is operable for checking headers of IP packets that traverse an access control point in said mobile router.

22. The arrangement of claim 16, further comprising means for provisioning said 15 access control exercising means at said mobility anchoring agent and said access control exercising means at said mobile router with provisioning information from an access control source.

23. The arrangement of claim 22, wherein said provisioning means comprises:
20 - means for transferring provisioning information for access control at both said mobility anchoring agent and said mobile router from said access control source to said mobility anchoring agent; and
 - means for forwarding provisioning information for access control at said mobile router from said mobility anchoring agent to said mobile router over the bi-directional link.
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24. The arrangement of claim 23, wherein said provisioning information for access control at said mobile router includes information related only to the uplink from said mobile router to said mobility anchoring agent.

25. The arrangement of claim 24, wherein said uplink-related provisioning information includes access control filter information for filtering said uplink packets.
26. The arrangement of claim 22, wherein said access control source is
5 implemented in an AAA client, and said arrangement further comprises means for transferring provisioning information related to a given node in said movable network from an AAA server associated with the home network of said node to said AAA client.
- 10 27. The arrangement of claim 26, wherein said provisioning means is operable for provisioning the provisioning information related to said node from said access control source only upon successful authentication of the node.
- 15 28. The arrangement of claim 26, wherein said AAA client is located in the same network as the mobility anchoring agent, and said arrangement further comprises means for transferring provisioning information from said AAA client to the mobile router side at least partly over said bi-directional link.
- 20 29. The arrangement of claim 26, wherein said AAA client is a PANA (Protocol for carrying Authentication for Network Access) Authentication Agent.
- 25 30. The arrangement of claim 22, wherein said provisioning means is operable for transferring provisioning information with at least one of the following protocols: PANA (Protocol for carrying Authentication for Network Access), PPP (Point-to-Point Protocol) and IEEE 802.1X.
31. A mobility anchoring agent for anchoring network mobility for a mobile router that manages a movable network, wherein said mobility anchoring agent comprises:
- means for interconnection with said mobile router through a bi-
30 directional link; and

- means for exercising access control to monitor and filter downlink packets to said mobile router.

32. The mobility anchoring agent of claim 31, wherein said mobility anchoring agent is configured to run a NEMO-based (Network Mobility) mobility support protocol with said mobile router.

33. The mobility anchoring agent of claim 31, wherein said mobility anchoring agent is configured for interconnection with said mobile router through a NEMO bi-directional tunnel, and said means for exercising access control is operable for filtering said downlink packets before said NEMO bi-directional tunnel.

34. The mobility anchoring agent of claim 31, wherein said means for exercising access control is operable for checking headers of packets that traverse an access control point in said mobility anchoring agent.

35. The mobility anchoring agent of claim 31, further comprising:

- means for receiving provisioning information for access control at both said mobility anchoring agent and said mobile router from an access control source;

20 - means for forwarding provisioning information for access control at said mobile router to said mobile router.

36. The mobility anchoring agent of claim 35, wherein said provisioning information for access control at said mobile router includes information related only to the uplink from said mobile router to said mobility anchoring agent.

37. The mobility anchoring agent of claim 31, wherein said mobility anchoring agent is configured to operate as local home agent for a node in said movable network.

38. An access control enforcement module for operation with a mobility anchoring agent that anchors network mobility for a mobile router managing a movable network, said mobile router being interconnected through a bi-directional link with said mobility anchoring agent, wherein said access control enforcement module is operable
5 for exercising access control to monitor and filter downlink packets to said mobile router.
